Name:	**ID:**	**serial:**

MATH 301 Term 061 QUIZ 4

1) Verify Stokes theorem: Assume that the surface S is oriented upward.
$F = zi + xj + yk$; S that portion of the plane $2x + y + 2z = 6$ in the first octant.

2) Use the Divergence Theorem to find the outward flux $\iint_S (F \cdot n) ds$ of the vector field $F = 4xi + yj + 4zk$,

D the region bounded by the sphere $x^2 + y^2 + z^2 = 4$

3) **(True or False)**	
I) The functions $f_1(x) = x^2$ and $f_2(x) = x^3$ are orthogonal on [-2,2]	( )
II) $\left\{ \frac{1}{\sqrt{2}}, \sqrt{\frac{3}{2}}x \right\}$ is an orthonormal set on the interval [-1,1]	( )
III) $\|f(x)\|^2 = \frac{3}{28}$ where $f(x) = x + 1$	( )
IV) The orthogonal set {1, sinx, sin2x, sin3x, ….} is complete.	( )